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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,716	06/25/2003	David R. Lumgair JR.	2003B047	3449

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EXAMINER	
BULLOCK, IN SUK C	
ART UNIT	**PAPER NUMBER**
1764	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/603,716	LUMGAIR ET AL.	
	Examiner	Art Unit	
	In Suk Bullock	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-112* is/are pending in the application.

4a) Of the above claim(s) *38-58* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37 and 59-112* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/25/03 & 1/25/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-37 and 59-112, in the reply filed on November 28, 2005 is acknowledged. The traversal is on the ground(s) that the claims are related such that simultaneous search and examination of all claim groups would not present an undue burden. This is not found persuasive because there exists an undue burden when Group I and Group II require distinct steps in the process.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 7, 10, 12, 13, 69 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller et al (6,403,854).

Miller discloses a process for reducing corrosion in an MTO effluent processing system comprising injecting a neutralization material such as caustic, ammonia, and amines into the first stage pumparound stream (col. 9, lines 10-22). The process comprises passing an effluent stream to a first stage quench tower of a two-stage quench zone. An overhead stream comprising the light olefins and a first stage bottoms stream comprising catalyst fines, impurities, and water is withdrawn from the first stage

quench tower. A portion of the first stage bottoms stream is injected with a neutralizing stream and returned to an upper portion of the first stage quench tower as a quench pumparound stream. The cooled first stage overhead stream is passed to the second stage quench tower to separate the light olefins from water to provide a vapor product stream comprising light olefins and a purified water stream. A first portion of the purified water stream is returned to an upper portion of the first stage quench tower. A second portion of the purified water stream is cooled and returned to an upper portion of the second stage tower. A third portion of the purified water stream is passed to a water stripper column to provide a highly purified water stream. This highly purified water stream can be withdrawn for reuse anywhere in the process as pure water. The vapor product stream is compressed, passed to an adsorption zone and then passed to a caustic wash zone for removal of carbon dioxide. The resultant carbon dioxide free light olefin stream is passed to a dryer zone for the removal of water and passed to a conventional light olefin recovery zone. See col. 12, line 63 thru col. 14, line 52 and Figures 2-4.

It is noted that Miller does not explicitly disclose the pH of the quench medium. However, Miller discloses contacting the reactor effluent with a relatively pure aqueous stream and a neutralizing agent at the top of the first quench tower which reads upon Applicants' claimed quench medium (see col. 2, lines 51-56). Thus, the quench medium of Miller would inherently be at least 7.0 and, therefore, anticipates claims 3 and 4 directed to pH of the quench medium.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5, 6, 8, 9, 11, 14-37, 59-68 and 70-112 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al (6,403,854).

Miller discloses a process for reducing corrosion in an MTO effluent processing system comprising injecting a neutralization material such as caustic, ammonia, and amines into the first stage pumparound stream (col. 9, lines 10-22). The process comprises passing an effluent stream to a first stage quench tower of a two-stage quench zone. An overhead stream comprising the light olefins and a first stage bottoms stream comprising catalyst fines, impurities, and water is withdrawn from the first stage quench tower. A portion of the first stage bottoms stream is injected with a neutralizing stream and returned to an upper portion of the first stage quench tower as a quench pumparound stream. The cooled first stage overhead stream is passed to the second stage quench tower to separate the light olefins from water to provide a vapor product stream comprising light olefins and a purified water stream. A first portion of the purified water stream is returned to an upper portion of the first stage quench tower. A second portion of the purified water stream is cooled and returned to an upper portion of the second stage tower. A third portion of the purified water stream is passed to a water stripper column to provide a highly purified water stream. This highly purified water stream can be withdrawn for reuse anywhere in the process as pure water. The vapor product stream is compressed, passed to an adsorption zone and then passed to a caustic wash zone for removal of carbon dioxide. The resultant carbon dioxide free light olefin stream is passed to a dryer zone for the removal of water and passed to a conventional light olefin recovery zone. See col. 12, line 63 thru col. 14, line 52 and Figures 2-4.

Miller does not disclose monitoring various regions of the process, e.g., pumparound stream, an overhead stream conduit, etc. for corrosion.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Miller by including the step of monitoring various regions of the process for corrosion since Miller has disclosed that corrosive materials may build up in the quenching process. A skilled artisan would recognize that corrosive materials may be carried and/or formed throughout the process of Miller and would monitor the process for corrosion and add a neutralizing agent where it is needed to reduce corrosion to maintain the apparatus in maximum performance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to In Suk Bullock whose telephone number is 571-272-5954. The examiner can normally be reached on Monday - Friday6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I.B.

Walter D. Griffin
Primary Examiner